E/CONF.39/D/167
7 Nov.1962
ORIGINAL : ENGLISH

UNITED NATIONS CONFERENCE
ON THE APPLICATION OF SCIENCE AND TECHNOLOGY
FOR THE BENEFIT OF THE LESS DEVELOPED AREAS

Agenda Item: D.1

United States of America

THE PROVISION OF ADEQUATE CAPITAL FOR INDUSTRIALIZATION

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No. 732 THE PROVISION OF ADEQUATE CAPITAL FOR INDUSTRIALIZATION
D.1

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1) There are few truths in social science more demonstrable than the necessity of capital for economic development, and of a growing rate of capital investment -- in people as well as in tangible form -- for increasing living standards. What is true for economic development is even more true for industrialization, which is synonymous with the use of machinery and of technological and managerial skills to multiply the power to produce goods.

2) There are few facts more evident in the less developed parts of the world than the inadequacy of capital for most of the needs of industrialization. This despite the fact that in the industrialized nations enormous quantities of capital funds are seeking investment and, in the face of very moderate rates of return, are being invested mainly within the industrialized nations. (See Table 1 showing the distribution of U. S. direct investments abroad.) The contrast poses questions which must be considered in a paper of this kind, because in the explanation of the contrast some of the most important questions may be answered.

The Role of Other Factors in Industrialization

3) The essential nature of capital is that it yields its product over a period of time -- often over a decade or more, as depreciation schedules readily demonstrate. Some of the basic investments facilitating industrialization, such as power and transportation systems, have the longest useful lives and therefore the longest pay out periods. Therefore, a major consideration in investment -- the conversion of liquid capital into produced means of further production -- is not only the current rate of return on investment, which may be very high in less developed countries, but the degree of uncertainty over the realization of these returns over the useful life of the investment. A high degree of uncertainty means that a high discount must be applied to the returns of future years, and that therefore the present value of these returns may be very low. There is no paradox in the fact that most investment is concentrated in developed countries with current rates of return less than those in less developed countries; the discount for risk and uncertainty accounts for most of the difference. This phenomenon is a consequence of rational calculation, not necessarily of differences between economic systems.

4) My first conclusion is, therefore, that provision of adequate capital for industrialization depends upon reasonable stability in those conditions which affect the prospective rate of return on capital. The foremost of these conditions are political stability and good government administration. These conditions will permit capital to be used effectively, without interruptions, delays and vexations which so seriously impair productivity, and without drastic and uneconomic changes in laws and regulations affecting the use of the investment or the distribution of

its products. Many of the less developed countries cannot now assure these conditions.

5) For foreign capital investment in less developed countries, the stability conditions have additional content. The prospective return on investment is dependent not only upon domestic stability in the recipient country but also upon stability of their exchange rates, inasmuch as the foreign capital must be repaid in currency equal to that originally invested. The measure of equality is usually a fixed rate of exchange with a strong currency.

6) In addition to these general conditions, usually called "the investment climate" in English, there are other indispensable conditions with respect to the supply and quality of the other factors which must be directly combined with capital to produce industrial goods. Of these, the most important is management, especially because management can overcome deficiencies in other factors. Management is the function of initiating, directing and coordinating all of the factors to produce industrial goods with reasonable economy and efficiency. A superabundant supply of capital, such as that already available to several less developed countries, can contribute little to industrialization if management is deficient in numbers having the necessary skills. Ability to exercise the management function successfully is not acquired only by education, but also requires experience. It seems also to require special qualities of mind and personality which neither education nor experience are able to provide. The scarcity of good management is not limited to the less developed countries; it is cited in the developed countries most frequently as the factor in constantly short supply. It is the judgment of many of those responsible for international lending that inadequacy of management in less developed countries is a more important obstacle to progress than inadequacy of capital.

7) Finally, for successful use of capital in industrialization there must be an adequate supply of workers well enough educated, trained and motivated to perform the tasks assigned to them. This requirement is not uniform for all workers but varies with their jobs and the industries in which they work. In the developed countries, the minimum educational attainment for industrial workers has become ten to twelve years of schooling, but it is not clear that so much education is actually required for most jobs. Most of the industries now being carried on in less developed countries do not require such educational attainment, and much expansion of industry is possible on a minimum educational program.

8) It is not enough, however, to assure sufficient education and training for an industrial labor force. Productivity depends upon rates of pay between jobs and persons being equitable, and on a level of pay which bears a reasonable relationship to the level of productivity in the country. Improvements in productivity should be equitably shared with workers in ways which both promote their improved performance and make them better customers. Only by gearing increases in pay to increased productivity can living standards be raised and motivation for improved productivity encouraged. Moreover, health and housing have a direct bearing on productivity, and are a legitimate concern of good management and good government in countries seeking to industrialize.

9) The foregoing briefly indicates the role of factors other than capital in industrialization. Another requirement, adequate markets to achieve minimum economies of scale, will be discussed later. Capital, management, labor and markets are as essential to successful industrialization as four legs to a horse.

And, just as a horse may require a road to run with any speed, stable and efficient government providing a good investment climate is required if industrialisation is to progress with reasonable speed.

Lessons from the Developed Countries in Meeting Gaps in the Supply of Capital

10) As noted before, capital in liquid form is essentially present purchasing power which is exchanged for a promise of future repayment out of the proceeds of productive investment. The developed countries have evolved institutions and methods for mobilizing large amounts of such capital, and for channeling it into industrial investment.

11) Capital for industrialization consists essentially of three types: (1) short-term loans for financing current operations, inventories, and accounts receivable; (2) intermediate and long-term loans (over ten years) for financing plant and equipment; and (3) equity capital, the permanent capital supporting the whole enterprise which also provides a margin of security for all types of loans. Not included in these categories is the capital for supporting infrastructure for industrialization -- roads and other means of transport, harbors, docks, public storage facilities, communications, etc. -- which require financing of a permanent type, often by governments.

12) In the advanced countries and the developing countries alike, short-term capital -- under six months' financing -- is generally available, and for well-established enterprises there is little difficulty in securing financing up to one year when it is needed as an integral part of an operation. This is the traditional field of commercial banks which obtain their funds from deposits, usually payable on demand, of businesses, governments and individuals. The most important gap in short-term financing is for poor credit risks, and these are assisted by a variety of specialized institutions, including government financed institutions like the Small Business Administration in the United States.

13) Intermediate and long-term financing for industry in developed countries is similarly available through a variety of channels. For well-established companies needing longer-term financing in quantity, the predominant source of funds is the retained earnings of the enterprise itself. This source, which increases the proportion of equity capital in the enterprise, is a major substitute for loans. To augment this source, the capital market (for bonds), insurance companies, pension and trust funds, and banks with term and savings deposits, or, in Europe, banks specializing in industrial financing, are all available. These sources of long-term credit are not well established in developing countries, partly because incomes are so low. Even where they are established, their investment policies may be heavily conditioned by instabilities in government and in monetary conditions in ways which discourage their financing of industry.

14) Equity financing in capitalist countries is supplied mainly by capital markets, supplemented especially in Europe by banks which specialize in such financing. Smaller amounts are usually supplied by the owners and those personally known to them; larger amounts are raised by public offerings in the market through investment bankers who specialize in the sale of longer-term debt and equity securities.

15) These various channels and institutions have been sketched briefly to indicate the types of financing required for industrial firms and to provide background for what follows. In the advanced countries capital needs have

been so well supplied that careful studies and experiments have been necessary to ascertain the gaps and to find means of filling them. The gaps have been found to be in financing for terms of more than five years and for amounts, in the United States at least, of under about $300,000. These gaps are usually found among new and rapidly growing enterprises, which have difficulty in securing enough equity capital (the usual description being that they are "under financed") and in securing loans for purchase of equipment and expansion of plant. This finding is particularly relevant for less developed countries, where new, smaller and, hopefully, rapidly growing enterprises are likely to be numerous in the early stages of industrialization.

16) New and specialized institutions have been established in the developed countries to fill these gaps. In the United States, Canada, England and some other countries, a national institution has been established with government or official financing. In the United States, in addition to a national, publicly financed institution, both private and state financed institutions have also been established (e.g., equity capital corporations or groups, development credit corporations, small business investment companies, state development corporations, etc.). Hundreds of local areas have also set up privately financed corporations to supply industrial plants or long-term loans for new plants to stimulate industrial growth in the local area which they serve.

17) Developing countries are characterized by both an inadequate supply of savings and inadequate channels for financing industry with the savings available. Because industrialization can raise income levels upon which an increased supply of savings depends, special attention to the problem of improving channels for moving savings into industry is especially important.

18) Developing countries usually lack adequate institutions for providing either equity capital or longer-term loans to industry. Because the smaller and rapidly growing industrial firm is likely to predominate in such countries, and because such firms may be expected to encounter the most serious capital shortages, special attention to this type of financing is called for. Large scale, foreign financed and managed industrial companies can draw upon their own resources and those of the capital markets in developed countries, but smaller firms cannot. What is very much required in the developing country, therefore, is a substitute for the capital market and its institutions, a substitute that performs the same economic functions. Moreover, such a substitute should, so far as possible, be a channel linking the capital markets of developed countries and the capital supply of international agencies to the capital needs of developing countries.

19) A type of institution to meet this range of financing needs is comparable to the special institutions which have been successfully pioneered already to fill the gaps in longer-term and equity financing in the developed countries. It is usually called a development bank. Fortunately, there is in this collection of papers a special paper on development banks, and the reader is referred to that paper for an adequate treatment. (See Vincent Checchi, "Development Banks".)

Domestic vs. Foreign Sources of Capital

20) The essence of capital from the supply side is the transfer of resources from producing goods destined directly for consumption to producing goods which are destined to make other goods, e.g., from growing food to making a plow. This transfer of resources is nowhere more evident than in the less developed

countries where resources are devoted primarily to producing a minimum supply of goods for consumption. To secure industrial development, it is necessary to devote a larger proportion of resources to investment. This means to reduce an already low level of consumption, to skim off into new investment as much of any increase in productivity as possible, or to increase total effort, or to do some combination of all three.

21) The bulk of an increase in capital formation represents a transfer of domestic resources into capital formation. Lengthening the period of education or increasing the numbers in school is a domestic transfer. Building a road represents another such transfer, as does the construction of houses. If such activities were financed by foreign loans, their essential nature would not change; the loan would pay for the real resources which were transferred, but no addition to domestic resources would be made available by the foreign financing. If the loan were used to pay for increased imports to replace goods formerly made by the resources being used to carry out the investment program, then the loan would add to the total resources available, but it would impose a requirement to repay in exports (or in reduced imports) for investments not necessarily related to the production of export goods or import substitution goods. The essential point is that the possibilities of using foreign capital are limited by the capacity to generate foreign exchange, and that to use foreign capital for investments not related to such a purpose invites default on foreign obligations and the consequent drying up of the foreign sources of supply.

22) Recent estimates 1/ of net investment that might be made productively in the less developed world indicate that about 75 percent of the net investment can be financed from domestic savings and about 25 percent may be needed from foreign sources. In the case of the twenty Latin American countries participating in the Alliance for Progress, the investment program for 1962-71 calls for about 85 percent of the investment to be domestically financed and 15 percent to be financed from foreign sources. These figures, while illustrative, indicate that domestic, not foreign, sources are expected to supply the major part of the capital required for development.

23) Economic utilization of capital for industrialization calls for a careful plan which relates domestic sources of capital to essentially domestic projects and foreign sources of capital to investment goods obtainable only from abroad. It also calls for planning foreign exchange earnings sufficient to service and discharge foreign loans. The almost universal restriction of foreign payments in developing countries attests to the insufficiency of prior planning in these respects. Much of the foreign capital from governments and international institutions has had to be used for meeting foreign exchange deficiencies rather than for new investment in equipment of the types available only from foreign sources.

24) Experience to date argues strongly for industrialization that clearly meets two requirements: (1) It uses capital most efficiently, which is best measured by projects yielding the highest discounted return over cost and (2) it fits into a total development program which will adequately meet the payments in foreign exchange entailed in its financing. These requirements can be met by a carefully planned program or by leaving to free markets the problem of allocating and directing capital. There is still great uncertainty about the

1/ Paul N. Rosenstein-Rodan, "International Aid for Underdeveloped Areas," The Review of Economics and Statistics (May 1961), 107-138.

capacity of less developed countries to follow the former course, and there is great reluctance in most of the less developed countries to follow the latter.

Economies of Scale and the Problem of Markets

25) The selection of industries to establish or to expand in a developing country, assuming some purposive governmental direction of the process, is complicated by the constraints imposed by technology. Virtually any product can be made in a developing country if cost and efficient use of capital and foreign exchange resources were not considered. Because both capital and foreign exchange are scarce, economic use of both argues for the establishment of plants as nearly competitive with those elsewhere as possible.

26) There is a wide range of products that can be made in smaller plants serving limited markets. (A paper in this collection by Eugene Staley on "The Role of Small and Medium Industry in Industrial and Economic Development" explores this field.) A recent study for the United States International Cooperation Administration demonstrates that profitability of manufacturing in many lines is average or above average in smaller plants in developing countries. The list with above average profits includes soft drinks, distilled and malt beverages, ice, rubber products, pharmaceuticals, paper and paper products, printing and publishing, structural clay products, concrete products, certain types of electrical machinery and appliances. The list of lines showing average profitability is similarly extensive: sugar refining, cotton, wool and knitted textiles, as well as textile finishing and dyeing, furniture, certain metal products, glass and glass products, machine shops. Neither list is exhaustive.

27) At the other end of the scale, certain manufactures are likely to be carried on only with very large investments and primarily for export. Examples are aluminum and copper. There are resource-oriented industries likely to be undertaken only with extensive foreign capital, management and marketing assistance.

28) There is a wide range of other manufactured products which, to support optimum size plants, require markets far larger than those available in one developing country or even a contiguous group of them. If we use the scale of United States plants as a standard for optimum size, a market with United States purchasing power per capita of eleven million people would be required for one automobile plant making its own engines and bodies, but not other components, and an investment of $250,000,000 to $500,000,000 2/. The market of a developing country would have to be roughly ten times as big, or of more than 100,000,000 people to justify one such plant.

29) Other examples are steel, with a capital requirement of $300,000,000 to $700,000,000 and a developing country market of more than 26,000,000 people; petroleum refining, with capital requirements of $225,000,000 to $250,000,000 and a market of 26,000,000 or more; rayon, with capital of $50,000,000 to $75,000,000 and a market of 75,000,000; tires and tubes, with capital of $15,000,000 to $30,000,000 and a market of 31,000,000. The fact that such plants exist in some countries with smaller markets than these indicates that costs are not competitive, which is usually the case, or that the domestic market is supplemented by the foreign market.

30) It must be concluded that the economies of scale require plants of such large size for many products that developing countries would have to form customs unions to justify their establishment if they wish to produce reasonably low-cost products. In these cases, nationalism is the enemy of efficiency.

2/ This and the following examples were derived from Bain, Joe S., Barriers to New Competition, Harvard University Press, 1956.

31) Differences in the sources of capital available for various types of projects may well result in the neglect of highly productive and profitable smaller industrial plants and emphasis upon large, high capital cost projects in industry and in other fields. Typically, the rate of interest from domestic sources in less developed countries for financing small undertakings is very high, often from 10 to 25 percent or more. On the other hand, loans from international agencies or foreign government sources for large projects, or the rate on borrowings in their home countries by corporations establishing plants in developing countries, may be six percent or less. Projects which are economically justified in the eyes of the foreign lender or investor may contribute far less to the productivity of the developing country, per unit of capital investment, than would equivalent investments in a number of small manufacturing plants able to earn the going rate of return in the developing country.

32) To secure optimum size plants which will be competitive with foreign sources of supply, and to secure maximum returns from the limited supply of capital available to them, most developing countries would be well advised to establish development financing institutions which concentrate upon smaller plants capable of earning the high domestic rate of return on capital, particularly when foreign capital to finance such development financing institutions is available at relatively low cost. As Table 2 indicates, the volume of aid available for such purposes may be very large, but little of it has so far been channeled through such development financing institutions into smaller plants.

33) The considerations discussed in this paper seem to demonstrate that adequacy of capital for industrialization cannot be determined by statistical measures relating volume of investment to gross national product or income, or by relating the volume of foreign capital available or used to some measure of need. Conditions largely within the control of the developing countries would appear to determine whether larger supplies of capital can be made available and can be effectively used.

Table 1 -- Cumulative book value of U. S. direct investments abroad by geographical areas, 1946, 1950, 1955, 1957, 1959, and 1960

(Billions of dollars)

	1946	1950	1955	1957	1959	1960 a/
World total	$7.2	$11.8	$19.3	$25.3	$29.8	$32.7
Canada	2.5	3.6	6.5	8.6	10.3	11.2
Europe b/	1.0	1.7	3.0	4.2	5.3	6.6
Oceania, Japan, and Union of South Africa	.2	.4	.9	1.2	1.4	1.5
Total, high investment countries	3.7	5.7	10.4	14.0	17.0	19.3
Latin America c/	3.0	4.6	6.4	8.1	8.9	9.3
Middle East d/	.2	.7	1.0	1.1	1.2	1.2
Asia e/	.2	.3	.5	.7	.8	.9
Africa f/	.1	.15	.3	.4	.5	.6
Total, low investment countries	3.5	5.8	8.2	10.3	11.4	12.0
International g/	h/	.35	.6	1.0	1.4	1.4

a/ Preliminary.

b/ Includes Turkey.

c/ Includes 20 Latin American Republics and dependencies.

d/ Includes countries East of Suez up to and including Iran but excluding Turkey.

e/ Excluding Japan.

f/ All of Africa except Union of South Africa.

g/ Shipping enterprises registered in Liberia and Panama but operating worldwide.

h/ Not available.

Source: U. S. Department of Commerce, "Survey of Current Business," various issues.

Table 2 -- GNP and commitments of loans and grants for selected countries to less developed areas, 1960

(Millions of U. S. dollars)

Country	GNP at current prices (estimated)	Commitments			Total commitments as per cent of GNP
		Loans over 5 years	Grants	Total loans and grants	
U.S.S.R. a/	226,000	1,084	11	1,095	0.48
West Germany	66,720	209	44	253	.38
Japan	36,715	50	142	192	.52
France b/	56,260	87	687	774	1.38
Italy	30,785	52	2	54	.17
United Kingdom	69,160	223	158	381	.55
Canada b/	35,300	---	58	58	.16
United States	503,200	2,028c/	1,796d/	3,824	.78

a/ Excludes loans and grants to Soviet bloc countries.

b/ Disbursements; commitments not available.

c/ Includes DLF, ICA, Public Law 480 (title I), and Export-Import Bank.

d/ Includes MSP (ICA), Public Law 480 (titles I, II, and III), and other (malaria eradication, etc.).

Source: The International Development and Security Act, hearings, House Committee of Foreign Affairs, 87th Congress, 1st session, on H.R. 7372, June, 1961, pt. II, p. 819

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